Ectopic abdominal pregnancy in cow and its management

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Abstract

A pluriparous cow in third parity with 5 months pregnancy was presented for confirmatory pregnancy diagnosis at VCC, LUVAS, Hisar after conflicted results of pregnancy diagnosis from the field. On the basis of the clinical, USG findings and exploratory laparotomy, the case was diagnosed as case of ectopic pregnancy. Macerated ectopic fetus was removed successfully by laparotomy through paralumbar fossa approach in cow. The animal made a steady and uneventful recovery.

Key words: Cow; Ectopic; Exploratory laparotomy; Pregnancy

Introduction

Ectopic or extrauterine pregnancy is an unusual, abnormal, and pathological condition that involves pregnancy taking place outside of the uterus (Roberts, 1971; Sagar et al., 2016). The reasons and processes resulting in an ectopic implantation of the ovum are not always explicitly understood in humans or animals (De Cecco *et al.*, 1984). Although this condition in humans is a recognized pathology to gynaecologists in all its clinical features, it remains infrequently diagnosed in animals. Extra uterine pregnancy can be either tubal or abdominal based on its location. Abdominal pregnancy is further classified into two types: primary and secondary forms (Corpa, 2006). In the primary form, an oocyte is fertilized within the abdominal cavity, or a fertilized ovum enters the peritoneal cavity and attaches to the mesentery or abdominal organs. The secondary type of ectopic pregnancies occurs after the rupture of the uterus once the fetus has implanted due to external injury or internal pressure (Owensby, 2001). In domestic animals, instances of secondary extra-uterine pregnancies have been occasionally reported (Sheetal *et al.*, 2018). This clinical report presents a case of secondary abdominal pregnancy in a cow.

Case history and clinical observations

A pluriparous cow in third parity with 5 months pregnancy was presented for pregnancy diagnosis at VCC, LUVAS, Hisar after conflicted results of pregnancy diagnosis from the field, and the owner requested for confirmatory diagnosis. The owner reported that the cow was inseminated 5 months back and pregnancy was confirmed at two months post-AI but cow was diagnosed non-pregnant at 4 months post-AI by another veterinarian. Animal had pregnancy diagnosis by 2 times in the field during 4 to 5 months post -AI with conflicted results regarding pregnancy. The per vaginal examination showed a closed cervix with no discharge in the vaginal canal. During the rectal examination, the genitalia appeared similar to that of a non-pregnant animal; however, a hard mass near the anterior part of the right uterine horn was palpated. Ultrasonography using Toshiba (Nemio XG) machine equipped with trans-rectal transducer (5-7.5 MHz frequency), was performed to confirm the pregnancy status and to rule out about hard mass. No fluid and embryo was visualized within the uterine horns (Fig 1). No luteal structures were observed on ovaries during ultrasonography. Further exploration towards the right side of the uterine horn revealed bright hyperechoic bony parts of the fetus in hard mass (Fig.2). Based on the clinical and USG findings, the case was diagnosed as case of ectopic pregnancy.

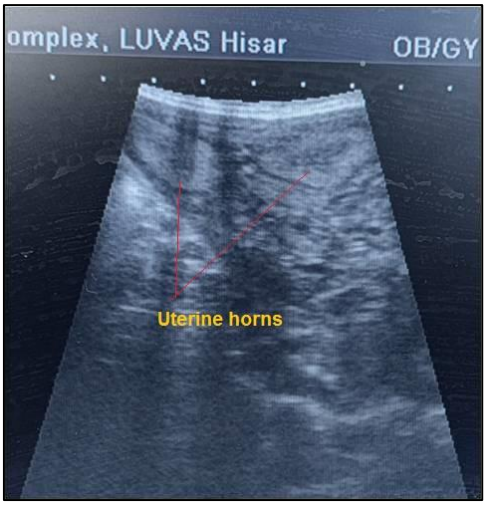

Fig. 1. Sonograph of Uterine Horns

Fig. 2. Sonograph showing hyperechoic image of bony structures.

Treatment and Discussion

Exploratory laparotomy was the sole choice to better diagnose the condition and to determine its surgical correction. Caudal right paralumbar approach was used for exploratory laparotomy to provide access to the uterus (Fig 3) under paravertebral anaesthesia (between T13-L1, L1-L2 and L2-L3) using 2% Lignocaine HCL. Skin and muscles were incised to open the abdominal cavity. During the examination, hard mass was extracted through flank without need of any incision as mass was attached with the serosal layer of anterior part of right horn through a small pedicle (Fig 4). Then muscles and skin were sutured in routine manner. On gross examination, no

identifiable vascular pedicles or active bleeding were observed. Similarly, no distinct nervous attachments could be identified. The absence of significant hemorrhage during expulsion indicates that any prior vascular connections had likely regressed over time. After extraction, incision on hard mass revealed a macerated foetus along with ossified ribs and long bone (Fig 5). The foetal might be around 3 to 3.5 months of age. Fetal maceration is an occurrence in pregnancy where fetal death takes place at any point during gestation but is more frequently seen after the third month of pregnancy, at which stage fetal bones are relatively well formed. Roberts stated that secondary extrauterine pregnancies happen in the last two-thirds of the gestation period. All the previous reports on ectopic pregnancies in cow (Hedge, 1989) and buffalo (Sheetal, *et al.*, 2018), also documented presence of fully developed foetus in the abdominal cavity and were diagnosed at the time of parturition due to the problems in foetal expulsion. However, Satheshkumar reported a case of secondary ectopic pregnancy with a live ectopic foetus during the first trimester of pregnancy in a crossbred cow.

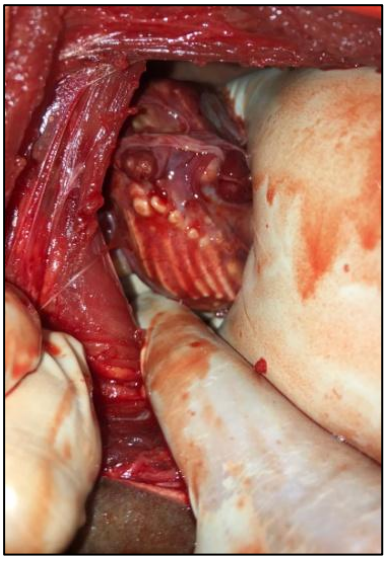

Fig. 3. Exploratory Laparotomy

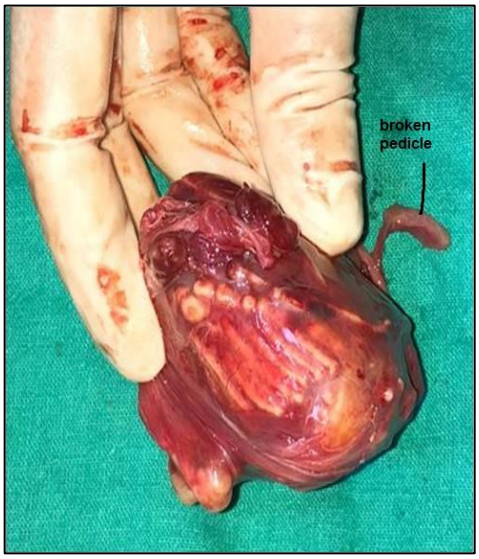

Fig. 4. Extracted mass containing bony structures.

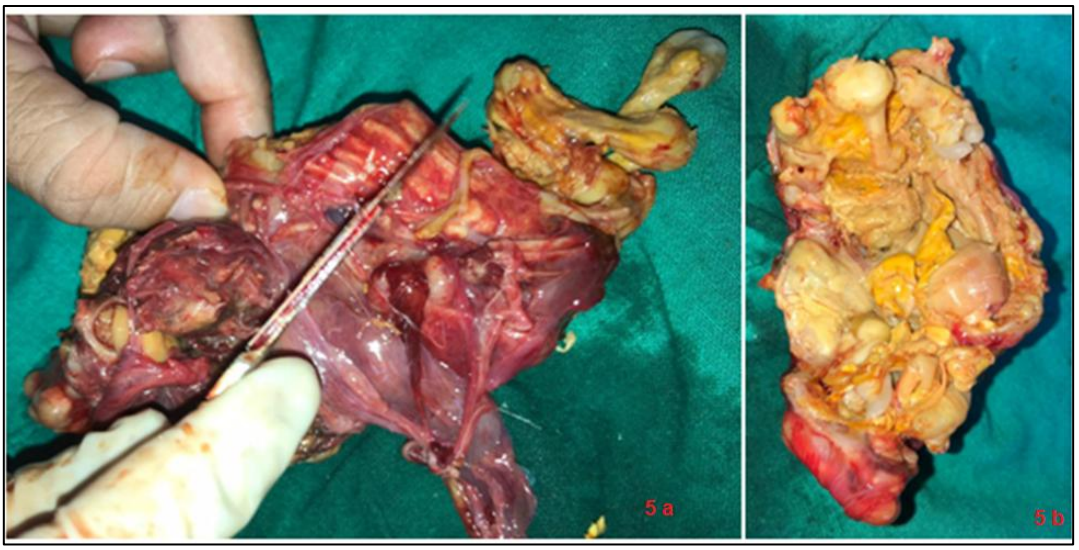

Fig. 5 a & b. Bony parts of macerated fetus.

The current incident likely indicates a secondary ectopic pregnancy in which the fetuses exited the uterus through a tear in the wall, although no tear or scar was visible during exploratory laparotomy. The case was classified as secondary ectopic pregnancy as primary extrauterine pregnancy is extremely rare or virtually non-existent in bovine due to the specific placental differences between bovine and species where this condition is more common like humans and rodents (Roberts, 1971). The rupture site may be merely a small or imperceptible scar following uterine involution (Roberts, 1971). The cause of the rupture in the uterine wall may be attributed to spontaneous factors or trauma resulting from slipping, or colliding with other animals or other means. The

reason for the uterine rupture, permitting the fetus to enter the abdominal cavity, is often not known (Roberts, 1971). Postoperatively the cow was administered intravenous NSS 3 litres, Calcium borogluconate 450 ml slow i/v, and Ceftiour 1.0 g and Flunixin meglumine 12 ml intramuscularly and the animal had a gradual and uncomplicated recovery. Unfortunately, no follow-up data regarding subsequent conception was available as the animal was sold by the owner. This case report provides evidence of the effective management of a macerated ectopic fetus during the first trimester of pregnancy via laparotomy through the paralumbar fossa approach in a cow.

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Conflict of interest

The authors declare that they have no conflict of interest.

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